

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A reproducing apparatus for reproducing data stored to a data storage medium, comprising:

synchronization pattern detecting means for detecting a synchronization pattern from a reproduced signal of the storage medium data;

error detecting means for detecting an error between an amplitude of the reproduced signal and a reference point, the reference point being specified by a time at which a half cycle has elapsed from a start time of one cycle of a clock signal reproduced from the reproduced signal, ~~and by an amplitude of the reproduced signal~~; and

correcting means for correcting a deviation of the data from the clock signal, on the basis of a difference between an interval of the synchronization pattern detected and a predetermined period, and on the basis of a segment time of a time for a segment, based upon the error detected, the segment time corresponding to identify that the deviation of the data from the clock signal ~~has occurred~~, the segment time being one of a plurality ~~[[out]]~~ of segments into which the interval of the synchronization pattern is divided.

Claim 2 (Previously Presented): The reproducing apparatus according to Claim 1, wherein the synchronization pattern detecting means further comprises:

detection range setting means for setting a detection range from which the synchronization pattern is detected, on the basis of a count value of the clock signal; and

synchronization pattern detection signal inserting means for inserting a signal representing detection of the synchronization pattern, at a time specified by the period predetermined, where the synchronization pattern has not been detected within the detection range.

Claim 3 (Currently Amended): The reproducing apparatus according to Claim 1, wherein the error detecting means detects a phase error, which is an error in a time direction between the reference point and the reproduced signal, and the correcting means corrects the deviation of the data from the clock signal, on the basis of the difference between the interval of the synchronization pattern detected and the period predetermined, and on the basis of the segment time ~~of the time for the segment~~, based upon the phase error detected, the segment time corresponding to ~~identify that~~ the deviation of the data from the clock signal, has occurred, ~~out of the segments into which the interval of the synchronization pattern is divided.~~

Claim 4 (Currently Amended): The reproducing apparatus according to Claim 1, wherein the error detecting means detects a zero-crossing offset, which is an error in an amplitude direction between the reference point and the reproduced signal, and the correcting means corrects the deviation of the data from the clock signal, on the basis of the difference between the interval of the synchronization pattern detected and the period predetermined, and on the basis of the segment time ~~of the time for the segment~~, based upon the zero-crossing offset detected, the segment time corresponding to ~~that~~ the deviation of the data from the clock signal, has occurred, ~~out of the segments into which the interval of the synchronization pattern is divided.~~

Claim 5 (Previously Presented): The reproducing apparatus according to Claim 1, wherein the correcting means further comprises:

deviation amount detecting means for detecting the difference between the interval of the synchronization pattern and the period predetermined, on the basis of the clock signal, as a deviation amount;

error integrating means for integrating the error for each of the segments;

deviation occurrence time detecting means for detecting a deviation occurrence time, which is a time for the segment in which an absolute value of the integrated value integrated becomes maximum between two successive ones of the synchronization patterns;

a FIFO (First In First Out) buffer for storing the data of a period longer than the period predetermined; and

control means for controlling the FIFO buffer such that the data of a period from the deviation occurrence time to detection of the synchronization pattern is moved in a time direction so as to correspond to the deviation amount, on the basis of the deviation amount and the deviation occurrence time, in a case where the deviation amount other than 0 has been detected.

Claim 6 (Currently Amended): A reproducing method for reproducing data stored in a data storage medium, comprising:

detecting a synchronization pattern from a reproduced signal of the storage medium data;

detecting an error between an amplitude of the reproduced signal and a reference point, the reference point being specified by a time at which a half cycle has elapsed from a start time of one cycle of a clock signal reproduced from the reproduced signal,~~and by an amplitude of the reproduced signal~~; and

correcting a deviation of the data from the clock signal, on the basis of a difference between an interval of the synchronization pattern detected and a predetermined period, and

on the basis of a segment time ~~of a time for a segment~~, based upon the error detected, the segment time corresponding to identify that the deviation of the data from the clock signal ~~has occurred~~, the segment time being one of a plurality [[out]] of segments into which the interval of the synchronization pattern is divided.

Claim 7 (Canceled).

Claim 8 (Previously Presented): A computer readable storage medium encoded with computer program instructions that cause a computer to perform a method by which data stored to a data storage medium for reproduction, the method comprising:

detecting a synchronization pattern which is detected from a reproduced signal from the data storage medium and which is contained in the data;

detecting an error between an amplitude of the reproduced signal and a reference point, the reference point being specified by a time at which a half cycle has elapsed from a start time of one cycle of a clock signal reproduced from the reproduced signal, and by an amplitude of the reproduced signal; and

correcting a deviation of the data from the clock signal, on the basis of a difference between an interval of the synchronization pattern detected and a predetermined period, and on the basis of a segment time ~~of a time for a segment~~, based upon the error detected, the segment time corresponding to identify that the deviation of the data from the clock signal ~~has occurred~~, the segment time being one of a plurality [[out]] of segments into which the interval of the synchronization pattern is divided.